Changkat Changi Secondary School
Physics Department
4E/5NA

Name: _____( ) Class: _____ Date: _____

TOPIC : Dynamics (Pressure)

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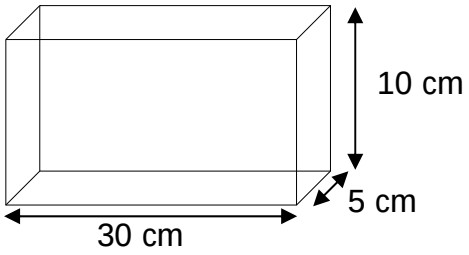
WORKSHEET 3A.2

Answer <u>all</u> questions in foolscap papers.

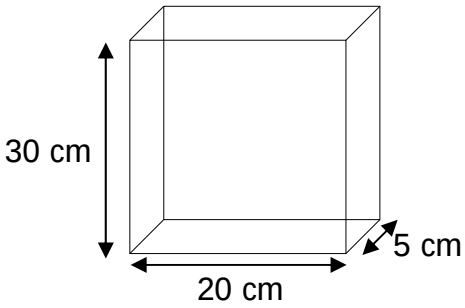
1. Calculate the pressure, in Pa, under a girl's feet if her mass is 50 kg and the area of her shoes in contact with the ground is (a) 2×10^{-4} m^2 (high heels), (b) 0.02 m^2 (flat soles).
   (Take gravitational field strength g = 10 Nkg^{-1}) [4]

2. A rectangular solid block has sides 30 cm x 5 cm x 10 cm and its weight is 80 N.

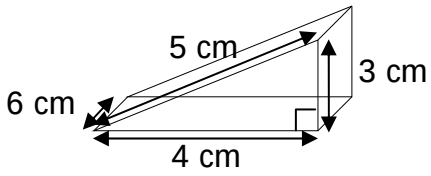


   Take g = 10 Nkg^{-1}, calculate
   a. the least pressure it can exert and
   b. the greatest pressure it can exert. [4]

3. A book placed vertically on a table as shown in the figure below exerts a pressure of 0.15 Ncm^{-2}. What is the weight of the book? [2]



4. The figure below shows a triangular block of wood, standing on a horizontal table. The density of the wood is 0.9 gcm^{-3}. Calculate



a. the mass of the block in kg; [3]
b. the pressure, in Ncm^{-2}, which the block exerts on the table. [2]

5. Explain why does a sharp knife cut more easily than a blunt one? [2]